

Using Pharos to Power Chemical Management

Nicole Acevedo, Ph.D., Elavo Mundi Solutions, LLC
Craig Manahan, Ph.D. WA Department of Ecology

5/28/20



Slides and recording will be posted to <https://pharosproject.net/tutorials>



MISSION

To advance human and environmental health by improving hazardous chemical transparency and inspiring product innovation



About Pharos

Comprehensive independent database of chemicals, polymers, metals and materials

- Hazard data for >160,000 CAS Numbers from 45 hazard lists
- Functional use data show where and why chemicals are used
- Process chemistry data identifies possible contaminants
- >600 compound groups reduce the chances of regrettable substitutions

Sign Up for Free

<https://pharosproject.net/>

Search Pharos

Search

Try [Benzene](#) [50-00-0](#) [surfactant](#) [roofing](#)

About Pharos

Pharos provides hazard, use, and exposure information on 163,894 chemicals and 151 different kinds of building products.

Hazard Assessments

Certified GreenScreen assessments in the public domain or for sale.

Hazard Lists

Authoritative scientific lists for health and environmental hazards and restricted substance lists.

Common Products

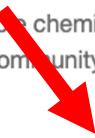
Common contents and hazards of 151 different kinds of building products.

Data Services

Pharos data in bulk and expert analysis from HBN researchers.

Join the Community

- Receive new updates when new hazards are added.
- Compare multiple chemicals
- Participate in community discussions



Create New Account

or

Login

GreenScreen® for Safer Chemicals

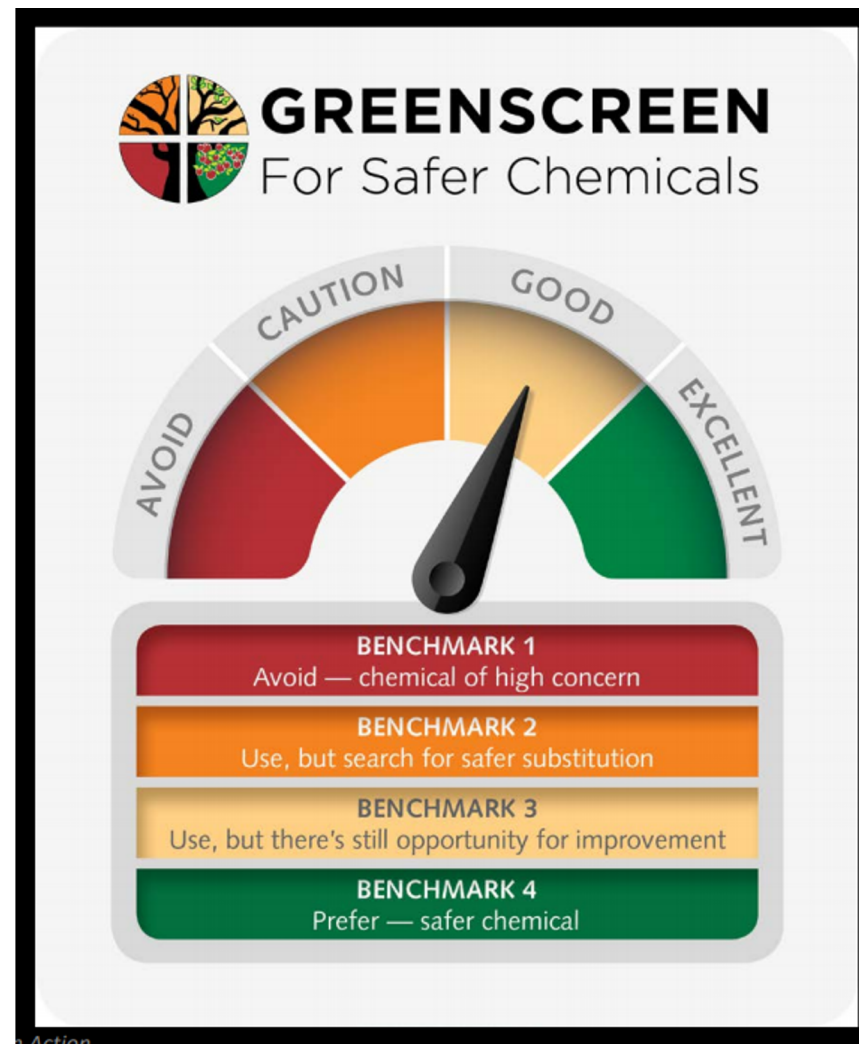
A comparative chemical hazard assessment method.

Provides a simple rating system to help decision makers compare chemicals.

Developed by the nonprofit organization Clean Production Action.

GreenScreen List Translator

LT-1	Likely Benchmark 1
LT-P1	Possible
Benchmark 1	
LT-UNK	Benchmark Unknown



Chemicals Management Solutions

1. Screen chemicals for RSLs & hazards
2. Find chemicals with a certain function
3. Identify safer alternatives
4. Access community of experts

Screen Chemicals against RSLs

8001-54-5

Benzalkonium chloride

ALSO CALLED [8045-21-4] ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE (primary CASRN is 8001-54-5), [12741-06-9] Benzalk...

[View all synonyms \(10\)](#)

Share Profile



[Hazards](#)

[Properties](#)

[Functional Uses](#)

[Process Chemistry](#)

[Resources](#)

Restricted Substance Lists (2)

- [GSPI - Six Classes of Problematic Chemicals: Antimicrobials *](#)
- [Health Canada - Cosmetic Ingredient Hotlist: Ingredients that are Restricted for Use in Cosmetic Products](#)

Screen Chemicals for Hazards

8001-54-5

Benzalkonium chloride

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View all synonyms (10)

Share Profile



Hazards Properties Functional Uses Process Chemistry Resources

All Hazards View

Show PubMed Results

Request Assessment

Add to Comparison

All Hazards	GS Score	Group I Human					Group II and II* Human						Ecotox			Fate		Physical		Mult	Non-GSLT						
		C	M	R	D	E	AT	ST	ST	N	N	SnS	SnR	IrS	IrE	AA	CA	ATB	P	B	Rx	F	Mult	PBT	GW	O	Other
LT-P1	-	-	-	-	-	-	vH	-	-	-	-	H	H-M	vH	vH	vH	-	M	-	-	-	-	H	-	-	-	R

Hazard Lists

Download Lists

ENDPOINT	HAZARD LEVEL	GS SCORE	LIST NAME	HAZARD DESCRIPTION	OTHER LISTS
Acute Mammalian Toxicity	vH	LT-UNK	GHS - Japan	Acute toxicity (inhalation: dust, mist) - Category 2 [H330]	+12
Skin Sensitization	H	LT-UNK	GHS - Japan	Skin sensitizer - Category 1 [H317]	+1

Screen Chemicals for Hazards

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Hazards Properties Functional Uses Process Chemistry Resources

All Hazards View

very High Acute Toxicity High Skin Sensitization

Show PubMed Results

Request Assessment

Add to Comparison

GS Score	Group I Human					Group II and II* Human					Ecotox			Fate		Physical		Mult	Non-GSLT							
	C	M	R	D	E	AT	ST	ST	N	N	SnS	SnR	IrS	IrE	AA	CA	ATB	P	B	Rx	F	Mult	PBT	GW	O	Other
All Hazards LT-P1	-	-	-	-	-	vH	-	-	-	-	H	H-M	vH	vH	vH	-	M	-	-	-	-	H	-	-	-	R

Hazard Lists

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Hazards

Properties

Functional Uses

Process Chemistry

Resources

All Hazards View

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		C	M	R	D	E	AT	ST	ST	N	N	SnS	SnR	IrS	IrE	AA	CA	ATB	P	B	Rx	F	Mult	PBT	GW	O	Other
All Hazards	LT-P1	-	-	-	-	-	vH	-	-	-	-	H	H-M	vH	vH	vH	-	M	-	-	-	-	H	-	-	-	R

Hazard Lists

Download Lists

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Find Functions of Chemicals

8001-54-5

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[View all synonyms \(10\)](#)

Share Profile



[Hazards](#) [Properties](#) [Functional Uses](#) [Process Chemistry](#) [Resources](#)

Functional Uses (25) [FAQ](#)

FUNCTION	PRODUCT TYPE	PRODUCT NAME	PERCENTAGE	SOURCE
algicide, bacteriocide, bacteriostat, fungicide, fungistat, virucide, tuberculocide, insecticide, microbiocide, microbiostat, molluscide, deodorant, disinfectant, sanitizer, and wood preservation				
an antimicrobial agent				
antibiotic/bactericide .. /used/ in algaecides and germicides for a wide variety of microorganisms				
antimicrobial agent		cif antibacterial spray lemon and green tea		
antimicrobial pesticide				
antistatic agent		toniandguy curl defining oil (prep)		
benzalkonium chloride is an extensively used preservative and disinfectant. it				

Identify Safer Alternatives

Pharos Search... Comparisons Common Products Discussions Account

< Back to Comparisons

Disinfectants that meet EPA's criteria for use against SARS-CoV-2

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Sharing: Public
Owner: Michel Dedeo
of Chemicals: 19

Receive Hazard Updates?
View all updates (0)

View Comparison FAQ
[Export to Excel](#)

Ethanol has low skin irritation - promising

All Hazards View Q Add chemical... [Add from file...](#)

Chemical	Group I Human					Group II and II* Human					Ecotox	Fate		Physical	Mult	Non-GSLT											
	GS	C	M	R	D	E	AT	ST	ST	N		N	SnS			nr	IrS	IrE	CA	ATB	P	B	Rx	F	Multi	PBT	GW
ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE 8001-54-5							vH					H	M	vH	vH		M						H				R
HYDROGEN PEROXIDE 7722-84-1		M			M-L		M	M						vH	vH		M				vH	pC	vH				R
SODIUM HYPOCHLORITE 7681-52-9							L	M						M	vH	vH					H		M				R
citric acid 12262-73-6					M-L		L	M						H	vH								U				R
CHLORINE DIOXIDE 10049-04-4														vH	vH						H		vH				R
PROPANOIC ACID, 2-HYDROXY-, (S)- 79-33-4							M	pC						vH	vH		M						U				R
THYMOL 89-83-8								M						M	vH	vH		M					U				R
HYPOCHLOROUS ACID 7790-92-3																							pC				
SODIUM CHLORITE 7758-19-2																											
Ethanol 64-17-5		L	L	L	M	DG	L	M	L	M	M	L	XG	L	H	L	L	L	L	L	vL	L	H				
SODIUM DICHLORO-S-TRIAZINETRIONE 2893-78-9																											
HYDROGEN CHLORIDE (HCl) 7647-01-0		L	L	M	M	DG	H	M	L	L	L	L	M	vH	vH		L	L	L	L	M	L					R
lactic acid 152-36-3		L	L	L	L	L	M	L	L	M	L	L	XG	vH	vH		L	L	L	L	vL	L	L				R
1,3,5-TRIAZINE-2,4,6-(1H,3H,5H)-TRIONE, 1,3-DICHLORO-, SODIUMSALT, DIHYDRATE 51580-86-0								M	M						H	H		M				H		U			R

Access a Community of Experts

Pharos

Comparisons Common Products Discussions Account

All Discussions	126
Announcements	34
Community Discussion	13
Feature Requests / Ideas	33
Chemical Discussions	45
Building Materials	1
Unread Posts	

SEARCH DISCUSSIONS

[80-05-7] BISPHENOL A (BPA)

[25495-98-1] HEXABROMOCYCLODECANE (HBCD)

PHthalATES (orthophthalates)

[1314-13-2] ZINC OXIDE

system updates

[Show all tags](#)

Admin Controls

- Pending Discussions (0)

All Discussions + New Discussion

Join Us for a Webinar on Pharos as a Virtual Learning Tool - Thursday Apr 30, 12 PM ET Announcements

Michel Dedeo, Manager of Chemical Data Systems, Healthy Building Network
a day ago

Pharos is a proven resource to help undergraduate and graduate students learn and apply basic toxicology, regardless of their academic backgrounds. Whether you are new to Pharos or are a long-time user, join us for a 60-minute session on how it can be used as a virtual learning tool. Thursday Apr 30, 12 PM ET. Sign up here: https://zoom.us/webinar/register/8915871302476/WN_Ey2gtfptSVCZ3ADJvKQxyA

2 replies Reply

Durisan Chemical Discussions

Nancy Uding, Program Director, Toxic-Free Future
22 days ago

Hello all, I am looking for information about a disinfecting product called Durisan. There is an entry in Pharos for Durisan soft. Can anyone tell me what soft means? Thanks! Nancy

[599-88-2] Benzenesulfonamide, 4-amino-N-(5-methyl-2-pyrimidinyl)-

5 replies Reply

ACC's Plastics Division releases mass balance certification principles Community Discussion

Tristan Roberts, Technical Director, Health Product Declaration Collaborative
24 days ago

Learn More with Tutorials

Pharos

Search...

Comparisons

Common Products

Discussions

Account



Guided tutorials help you get the most out of Pharos

Learn about specific features with these quick tutorials

- Compare hazards of multiple chemicals and track changes to their hazard profiles
- Find chemicals with a specific function (eg surfactant) or in a product category (eg. cosmetics)
- Learn about the most common building products types
- Find where a chemical is used in products
- Identify safer alternatives in common building product types
- View hazards in the new Pharos like they are displayed in the old Pharos
- View All Tours

Webinar slides and recordings
will be posted here as well

ABOUT

About Pharos
Terms of Service
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System Description

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Donate

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Twitter

RESOURCES

Assessments
Projects
Hazard Lists
Compound Groups


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Tutorials
Biomonitoring
Case Studies





Dr. Nicole Acevedo is a reproductive and environmental health scientist. She founded Elavo Mundi Solutions, LLC, to provide personal care and household cleaning brands clear solutions for cleaner, more sustainable and high-performing product development.



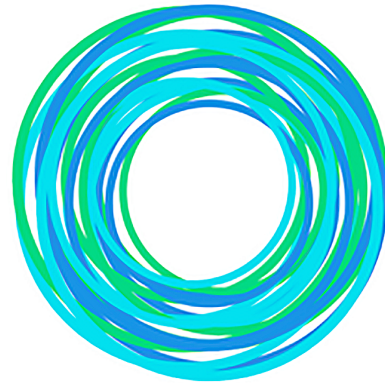
Driving the Market Through Ingredient Safety and Transparency

Nicole Acevedo, PhD

Founder & CEO, *Elavo Mundi Solutions, LLC*

Pharos Webinar: Powering Chemicals Management Solutions

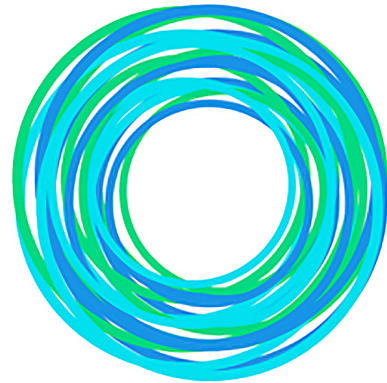
May 28, 2020



ELAVO MUNDI SOLUTIONS

LLC

Provide personal care and
household cleaning brands
clear solutions
for cleaner,
more sustainable
and
high-performing
product development



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- ❖ Integration of chemical management strategies
- ❖ Development of company-specific Restricted Substances List (RSL)
- ❖ Comprehensive screening of ingredients to ensure they meet strict criteria for reducing risk to human and/or environmental health
- ❖ Provide resources/strategies for engaging existing supply chain to participate in implementation of safer chemical alternatives



CHEMICALS IN THE MARKETPLACE

- There are **more than 85,000 chemicals** registered for use in the U.S.¹ with thousands more hitting the market every year²
- Nearly **3,000 are high-production-volume chemicals**³
- Less than 1/3 of these chemicals have publicly available safety data⁴ and **less than 2% have been assessed for their effects on children's health and development**⁴
- Scientific evidence to date shows that the **environmental contribution to disease** is estimated to be 24-33% of the global disease burden⁵

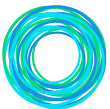
1. www.epa.gov/tscainventory/about-tscachemicalsubstanceinventory.

2. www.epa.gov/sciencematters/improved-methods-estimating-chemical-exposure

3. nepis.epa.gov/Exe/ZyPDF.cgi/7000052X.PDF?Dockkey=7000052X.PDF

4. www.edf.org/sites/default/files/6653_HighHopesLowMarks.pdf

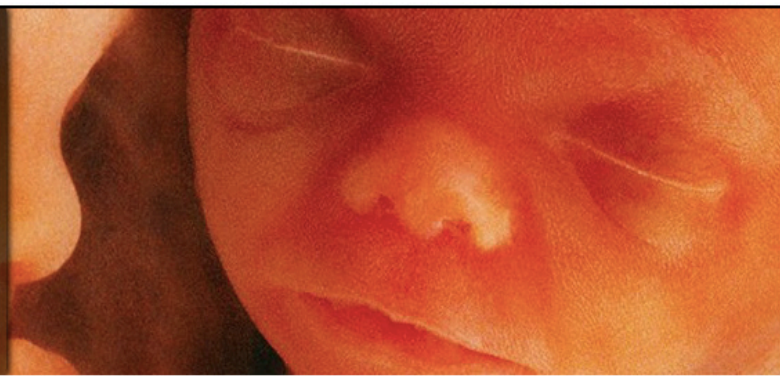
5. WHO (World Health Organization)/UNEP (United Nations Environment Programme) The State-of-the-Science of Endocrine Disrupting Chemicals - 2012 (Bergman Å, Heindel JJ, Jobling S, Kidd KA, Zoeller RT, eds). Geneva:UNEP/WHO. 2013





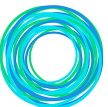
BODY BURDEN: THE POLLUTION IN NEWBORNS

The Pollution in Newborns



Over 200 synthetic
chemicals and pollutants
found in the umbilical cord
blood of newborn babies

THE SCIENCE IS TELLING
US THAT NOT ONLY ARE
WE BEING AFFECTED
BUT THAT MATERNAL
EXPOSURES CAN
TRANSFER TO THE
DEVELOPING CHILD.



Regulation Framework – Policy Directives in Europe and U.S.

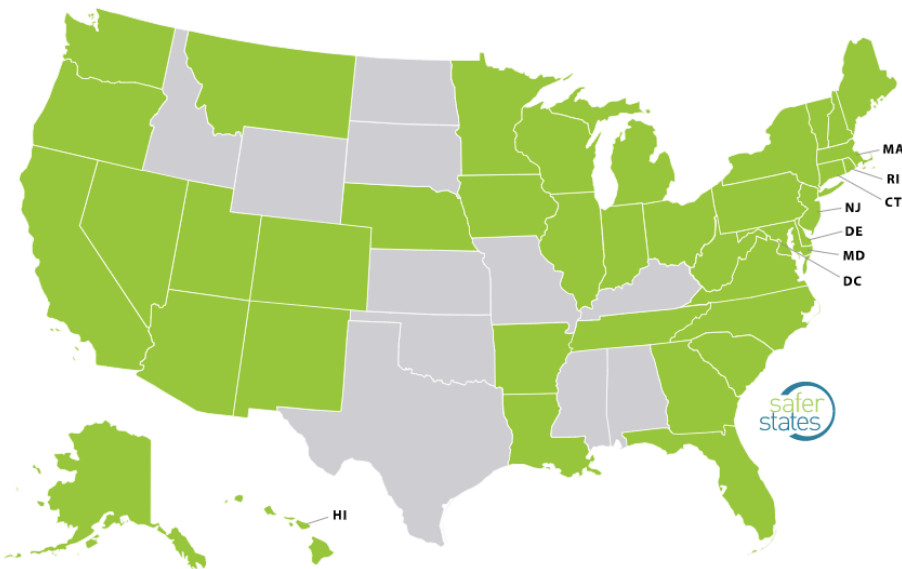
- **EUROPE – All Product Sectors:**

- **EU REACH Directive (2007)**
- **EU Cosmetic Directive (76/768/EEC):** Adopted in 1976; amended in 2003. Currently bans or restricts over 1,300 chemicals in cosmetics.
- **EU Cosmetic Products Regulation (EC No 1223/2009)** Adopted in 2009.

- **U.S. – Product Sector-Dependent Regulation:**

- **EPA – Household product regulation (Toxic Substances Control Act):** Adopted in 1976; amended in 2016. Currently bans 6 substances.
- **FDA – Cosmetic product regulation:** Adopted in 1938. Currently bans 11 substances.

Regulation Framework – U.S. States



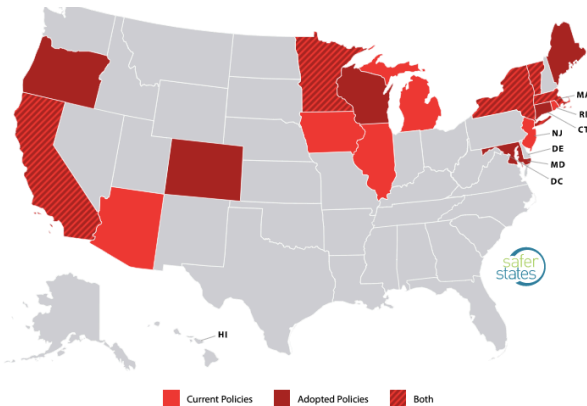
States are leading the way to safer chemicals

33 states are considering **244 policies** to protect people from toxic chemicals. **200 state policies** have been adopted in **35 states**.

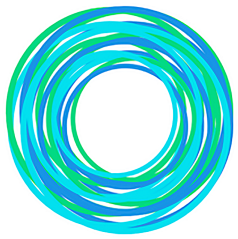
Click on a green state to learn about policies to keep people safe from toxic chemicals that harm our health.

Current Legislative Action on Chemical Prioritization, Disclosure, and/or Phase-Out

49 current policies in 11 states
25 adopted policies in 11 states



- **(2017) With SB 258 and AB 2775** California became the **FIRST** state to adopt legislation requiring **ingredient disclosure** in cleaning products and professional cosmetics to the public.
- **Current Proposed Legislation focused on:**
 - Banning use of specific chemicals during manufacture and in final products
 - Requiring full ingredient disclosure by manufacturer
 - Expanding lists of chemicals of concern
 - Requiring disclosure of allergens in cosmetic products
 - Reducing disparities regarding exposure risk within vulnerable communities
 - Establishing a purchasing framework to prioritize avoidance of toxic substances



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Helping Companies Incorporate Ingredient Safety Standards

- Develop clear description of company's brand standard on clean and sustainable products.
- Generate comprehensive Formulation Guidelines for internal company use and to share with manufacturing partners (formulators/suppliers):
 - List of standards and regulations that form basis of brand-specific formulation guidelines.
 - Ingredient preferences/restrictions
 - Brand-specific detailed Prohibited and Restricted Substance Lists
 - List of required documentation for all raw materials
 - List of required and recommended testing for approved formulations
- Review of all formula ingredient lists prior to and during formulation to ensure compliance to safety standards.
- Recommendations for alternative materials (if available).

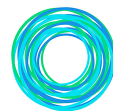


Pharos

Selecting Ingredients for Safety

Pharos database - key to initial identification of chemicals of concern:

- Consolidated hazard data for up to 21 different human health, ecotoxicological, chemical fate and physical hazard endpoints.
- View hazards based on certification program (i.e. GreenScreen®, C2C) and can easily compare hazard list outputs on-screen.
- Create personalized comparisons of different chemicals within a chemical group to assess hazards more efficiently.
- *Restricted Substance Lists* that include chemical -- valuable for understanding which chemicals are subject to governmental regulation or avoidance policies for industry sectors and/or non-profit organizations.



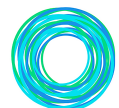
ELAVO MUNDI SOLUTIONS
LLC



Pharos

Selecting Ingredients for Safety

- **Chemical Properties:**
 - Known chemical identifiers, including INCI names
 - Chemical variants (if any known)
 - Name of compound group(s) that include chemical of interest
 - Key physical characteristics
- **Functional uses:** list of specific function and product type
- **Process chemistry:** includes known or potential residuals as well as list of other process chemicals that may include this chemical
- **Data resources:** includes both HBN-generated reports and links to external chemical databases



Why Formulate 'Beyond Compliance' ?

Political and Social Drivers

- Increased requirements for regulation and compliance across the supply chain
- Consumer trends toward health, well-being, and product transparency:
 - Ingredient disclosure
 - Contaminants of concern for human health
 - Ethical raw material sourcing
 - Safe for the environment

“safe” “green”
“organic” “sustainable”
“non-toxic” “biodegradable”
“clean”



Why Formulate 'Beyond Compliance' ?

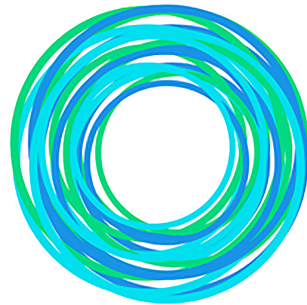
Business Case for Safer Products

- Brands, retailers and purchasers responding to demand signals for safer products.
- Global sales of 'natural' and organic beauty products projected to double — from \$11bn in 2016 to \$21.8bn in 2024.
- 'Green chemistry' market expected to exceed >\$100 billion by 2020.
- For investors and purchasers, hazardous chemicals are risky business.
- **Chemical Footprint Project:** Signatories with \$2.8 trillion in assets under management and over \$700 billion in purchasing power are asking their stakeholders to responsibly manage and reduce chemicals of concern.

Thank you!

Nicole Acevedo, PhD

nicole@elavomundi.com



ELAVO MUNDI SOLUTIONS

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Dr. Craig Manahan is a Safer Ingredients Chemist with the Washington Department of Ecology. He is focused on finding safer alternatives to chemicals currently used in products.

How WA Ecology uses Pharos to Identify Safer Alternatives

May 28th, 2020

Craig Manahan

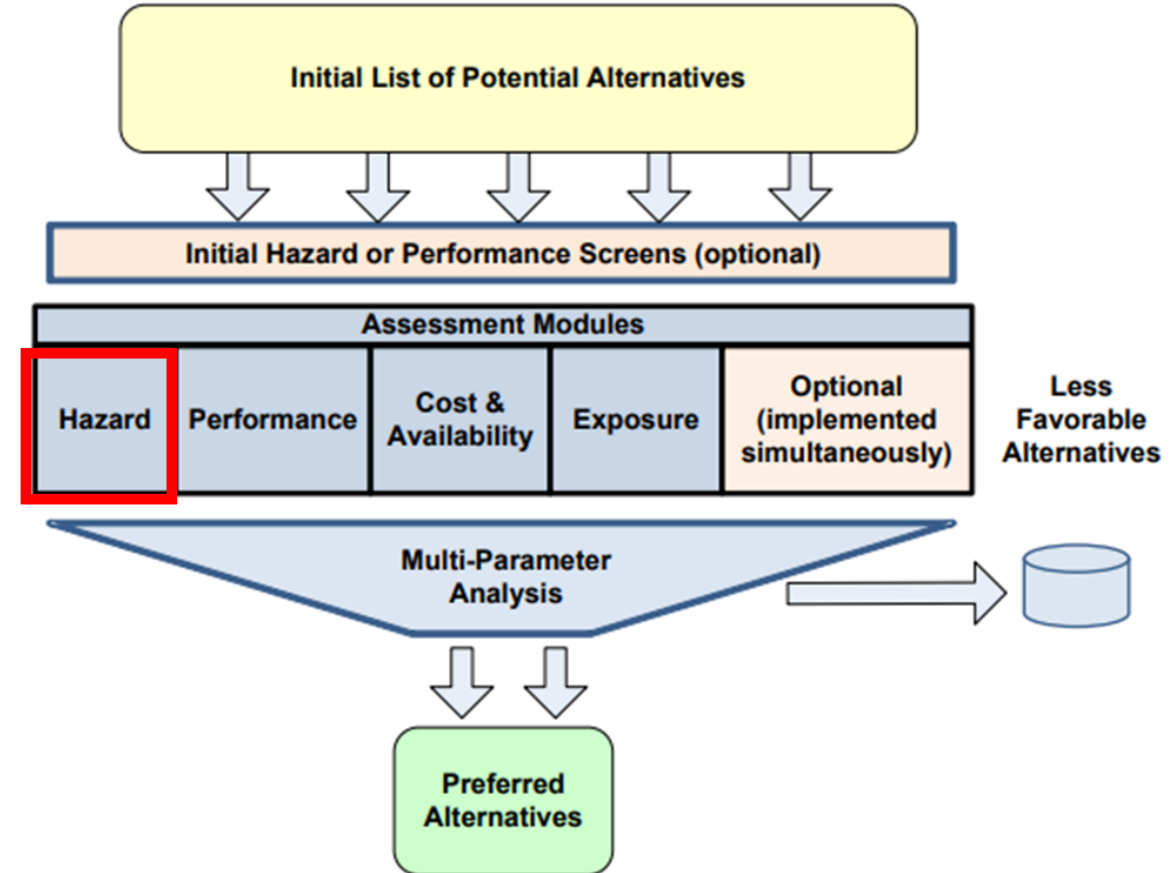
Safer Ingredients Chemist

Craig.Manahan@ecy.wa.gov

3604077355

Overview

- Finding alternatives and getting GreenScreen hazard assessments for the pollution prevention program
- Identifying hazards and screening alternatives for potential regulation



Department of Ecology Pollution Prevention and Toxics Reduction

Technical assistance for businesses

We offer many services to help businesses that deal with dangerous waste and chemicals reduce their use of toxic chemicals, dangerous waste generation, and facility operating costs. Our services are all:

- Non-regulatory
- Confidential
- Free

Finding inefficiencies and fixing them can possibly increase your business's profits. We have engineers, chemists, toxicologists, and environmental specialists trained to assist you and your business needs.

I want to...

- Contact a team member in my area to get started
- Learn about efficiency services for industrial facilities
- Get pollution prevention assistance for my small business

Prioritizing Chemicals

- Consider
 - Category- ex: Solvents, TSCA Work Plan, Plastics, E-Cigarettes
 - Production Volume (EPA Dashboard)
 - Exposure (EPA Dashboard)
 - Number of Products (EPA Dashboard)
 - List Translator/ GreenScreen Score
 - Presence on SCIL/Positive Lists
- Approximately 1000 Chemicals Considered

Using Pharos To Compare GS Scores

Pharos

Search...




Comparisons

Common Products

Discussions

Account

+ New Comparison

COMPARISON NAME	# OF CHEMICALS	UPDATED	DESCRIPTION	SHARING STATUS	ALERTS	DELETE
Solvents and Potential Safer Alternatives	33	05/22/2020		Private		
TSCA	36	04/23/2020		Private		

Using Pharos To Compare GS Scores

Phthalates and Alternatives



- no description provided -

Sharing: Private
 Owner: Craig Manahan
 # of Chemicals: 33

Receive Hazard Updates?

[View all updates \(28\)](#)

[View Comparison FAQ](#)

[Export to Excel](#)

All Hazards View ▾

[Add from file...](#)

Chemical	GS	Group I Human					Group II and II* Human								Ecotox			Fate		Physical		Mult	Non-GSLT				
		C	M	R	D	E	AT	ST	ST	N	N	SnS	SnR	IrS	IrE	AA	CA	ATB	P	B	Rx	F	Mult	PBT	GW	O	Other
✘ CYCLOHEXANE 110-82-7	LT-P1	H-L	-	-	H-L	-	M	pC	-	M-L	vH-M	-	-	H	H-M	vH	-	M	-	-	-	H	H	-	-	-	R
✘ Triethylene glycol 112-27-6	LT-P1	-	-	-	H-M	H-M	pC	pC	-	-	-	-	-	pC	pC	-	-	-	-	-	-	-	U	-	-	-	
✘ ETHYL ACETATE 141-78-6	LT-UNK	-	-	-	M-L	-	M	M	-	M-L	vH-M	-	-	-	H	-	-	-	vH-H	-	-	H	H	-	-	-	R
✘ Heptane 142-82-5	LT-P1	H-L	pC	-	H-L	H-M	L	pC	pC	M-L	vH-L	pC	pC	H	H-M	vH	-	-	-	-	-	H	H	-	-	-	R
✘ Diethylene glycol 111-46-6	LT-P1	-	-	M	M-L	H-M	M	-	pC	-	vH-M	-	-	-	-	-	-	-	-	-	-	-	H	-	-	-	R
✘ Methyl acetate 79-20-9	LT-UNK	-	-	-	M-L	-	L	pC	-	M-L	vH-L	-	-	H	H	-	-	-	vH-H	-	-	H	vH	-	-	-	X

Prioritizing Chemicals

CAS	Name	EPA Production Volume	EXPOCAST-MG/KG-BW/DAY	CPDAT Number of Products	GSLT	SCIL	Use
'110-82-7	CYCLOHEXANE	1,000,000,000 - 5,000,000,000 lb	8.45e-05	229	LT-P1	No	Solvent. Used in Production of Nylon.
'112-27-6	TRIETHYLENE GLYCOL	100,000,000 - 250,000,000 lb	6.48e-05	286	LT-P1	No	Aerosol Disinfectant. Automotive Fluids. Smoke machines. Plasticizer.
'141-78-6	ETHYL ACETATE	100,000,000 - 250,000,000 lb	4.4e-05	56874	LT-UNK	No	Solvent. Glues. Nail Polish Remover. Decaffeination.
'142-82-5	N-HEPTANE	500,000,000 - 750,000,000 lb	3.54e-05	885	LT-P1	No	Solvent. Brake Cleaner Fluid. Rubber Cement. Stove Fuel. Paints and Coatings.
'111-46-6	DIETHYLENE GLYCOL	750,000,000 - 1,000,000,000 lb	0.0000628	36154	LT-P1	No	Solvent. Humectant. Brake Fluid, Lubricants, Wallpaper Strippers.
'79-20-9	METHYL ACETATE	1,000,000,000 - 5,000,000,000 lb	0.00000741	140	LT-UNK	No	Solvent. Nail Polish Remover. Auto Paint. Glues.

Full GreenScreens

CAS	Name
'110-82-7	CYCLOHEXANE
'112-27-6	TRIETHYLENE GLYCOL
'141-78-6	ETHYL ACETATE
'142-82-5	N-HEPTANE
'111-46-6	DIETHYLENE GLYCOL
'79-20-9	METHYL ACETATE

	Group I Human					Group II and II* Human								Ecotox		Fate		Physical		
	C	M	R	D	E	AT	ST		N		SnS*	SnR*	IrS	IrE	AA	CA	P	B	Rx	F
							single	repeated*	single	repeated*										
BM-2	L	L	L	M	DG	M	H	L	M	L	L	L	H	L	vH	vH	vL	L	L	H
BM-2	L	L	L	M	M	L	M	L	M	DG	L	L	L	L	L	L	L	vL	L	L
BM-2	M	L	L	L	M	L	M	M	M	L	L	L	L	H	L	M	vL	vL	L	H
BM-2	L	L	L	M	DG	L	H	L	M	L	L	L	H	H	vH	vH	vL	M	L	H
BM-2	L	L	M	M	DG	M	vH	H	vH	H	L	L	M	L	L	L	L	vL	L	L
BM-2	L	L	L	M	DG	L	M	M	M	M	L	L	L	H	L	L	vL	vL	L	H

Full GreenScreens Provide Additional Information

Group I Human					Group II and II* Human								Ecotox		Fate		Physical					
C	M	R	D	E	AT	ST		N		SnS*	SnR*	IrS	IrE	AA	CA	P	B	Rx	F			
						single	repeated*	single	repeated*													
'111-46-6	DIETHYLENE GLYCOL	LT-P1	-	-	M	M-L	H-M	M	-	vH-M	-	-	-	-	-	-	-	-	-	-		
		BM-2	L	L	M	M	DG	M	vH	H	vH	H	L	L	M	L	L	L	L	vL	L	L

'142-82-5	N-HEPTANE	LT-P1	H-L	-	H-L	H-M	L	M-L	vH-L	H	H-M	vH	-	-	-	-	-	-	H			
		BM-2	L	L	L	M	DG	L	H	L	M	L	L	L	H	H	vH	vH	vL	M	L	H

PFAS in Food Packaging AA

WA Toxics in Packaging Law RCW 70.95G.070

- Legislature passed toxics law that bans perfluorinated and polyfluorinated substances in paper food packaging.
- Ecology will determine there are alternatives available. A peer review process required.
- Ecology reports to legislature and ban will take effect two years later.
- Based on the Interstate Chemicals Clearinghouse (IC2) modules: **Hazard (L2); Exposure (L1); Cost & Availability (L1) & Performance (L1).**

Safer Products for Washington



May 2018, Discussion Draft

Product-Chemical Profile for Nonylphenol Ethoxylates in Laundry Detergents



Table 6. Summary of aquatic hazard traits and uses for NPEs and their chemical alternatives

Chemical class	Chemical name	CASRN	Type of surfactant	Use in laundry detergents ¹	Environmental fate ²		Aquatic toxicity ²	
					Persistence	Degradate of concern	Acute	Chronic
Nonylphenol ethoxylates	Nonylphenol ethoxylate (NP9EO)	127087-87-0	Nonionic	Rare	Moderate	Yes	High	Moderate
Octylphenol ethoxylates	Octylphenol ethoxylate (OP10EO)	9036-19-5	Nonionic	Not used	High	Yes	High	Very high
Linear alkylbenzene sulfonates	Benzenesulfonic acid, C10-10-alkyl derivatives, sodium salts	68411-30-3	Anionic	Common	Very low	No	High	High
Alkyl polyglucosides	D-glucopyranose, oligomeric, decyloctyl glycosides	68515-73-1	Nonionic	Rare	Very low	No	Moderate	Moderate
Alkyl sulfate esters	Sodium lauryl sulfate	151-21-3	Anionic	Rare	Very low	No	High	High
Alcohol ethoxylates	C9-11 alcohols, ethoxylated (6EO)	68439-46-3	Nonionic	Rare	Very low	No	High	High
Alcohol ethoxylates	C12-15 alcohols, ethoxylated (9EO)	68131-39-5	Nonionic	Common	Very low	No	Very High	High
Sorbitan esters	Sorbitan monostearate	1138-41-6	Nonionic	Not used	Low	No	High	High
Ethoxylated/propoxylated alcohols	Oxirane, methyl-, polymer with oxirane, mono(2-ethylhexyl ether)	64366-70-7	Nonionic	Not used	Low	No	Moderate	Moderate
Alkyl ether sulfates	Poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-dodexyloxy-,sodium salt	9004-82-4	Anionic	Common	Low	No	High	High

NPE Alternatives Comparison in Pharos

✗ Polyethylene glycol mono(branched p-nonylphenyl) ether 127087-87-0	BM-1tp	L	L	DG	M	M	M	DG	DG	DG	M	L	DG	H	vH	vH	vH	-	H	L	L	L	-	-	-	-	R
✗ Polyethylene glycol mono(octylphenyl) ether 9036-19-5	LT-P1	-	-	-	-	H-M	H-M	-	-	-	-	-	-	H	H	vH	-	-	-	-	-	-	U	-	-	-	R
✗ sodium alkylbenzene sulfonate 68411-30-3	LT-P1	-	-	-	-	-	H-M	-	-	-	-	-	-	H	vH	-	-	M	-	-	-	-	U	-	-	-	R
✗ D-glucopyranose, oligomeric, decyl octyl glycosides 68515-73-1	LT-UNK	-	-	-	-	-	-	-	-	-	-	-	-	pC	H	-	-	-	-	-	-	-	U	-	-	-	R
✗ Sodium lauryl sulfate 151-21-3	LT-P1	-	-	pC	-	-	vH	M	-	-	-	-	-	H	vH	vH	-	M	-	-	-	-	vH	-	-	-	+
✗ C9-11 Pareth-3 68439-46-3	LT-P1	-	-	-	-	-	M	-	-	-	-	-	-	H	vH	pC	-	M	-	-	-	-	U	-	-	-	+
✗ C12-15 Pareth-11 68131-39-5	LT-P1	-	-	-	-	-	H-M	-	-	-	-	-	-	H	vH	pC	-	M	-	-	-	-	U	-	-	-	R
✗ Sorbitan monostearate (primary CASRN is 1338-41-6) 107461-71-2	LT-UNK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	U	-	-	-	+
✗ Oxirane, 2-methyl-, polymer with oxirane, mono(2-ethylhexyl) ether 64366-70-7	LT-UNK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	vH-H	-	-	-	U	-	-	-	+
✗ Sodium dodecylpoly(oxyethylene) sulfate 9004-82-4	LT-P1	-	-	-	-	-	H-M	-	-	-	-	-	-	H	H	H	-	M	-	-	-	-	H	-	-	-	+

Positive Lists (1)

- US EPA - DfE SCIL: Green Circle - Verified Low Concern


NPE Alternatives Comparison in Pharos

× Polyethylene glycol mono(branched p-nonylphenyl) ether
127087-87-0

BM-1tp



R



NSF SustainabilitySM
Sustainability Assured
Green Chemistry

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GreenScreen[®] for Safer Chemicals - Assessment for Nonylphenol ethoxylates, linear and branched, 1-20 moles EO (CAS 9016-45-9, 127087-87-0, 68412-54-4, and 26027-38-3)

Method Version: GreenScreen[®] Version 1.2¹

Verified or Non-Verified²: NON-VERIFIED

Thanks!

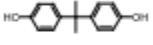
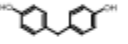
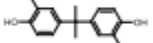
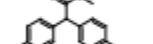
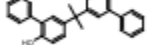

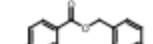
- Ecology Pollution Prevention Assistance
 - <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Preventing-hazardous-waste-pollution>
- Safer Products for Washington:
 - https://www.ezview.wa.gov/site/alias_1962/37555/safer_products_for_washington.aspx
- PFAS in Food Packaging Alternatives Assessment:
 - https://www.ezview.wa.gov/site/alias_1962/37610/pfas_in_food_packaging_alternatives_assessment.aspx

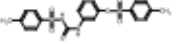
BISPHENOL A ALTERNATIVES IN THERMAL PAPER

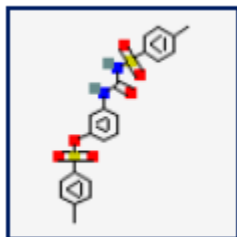


FINAL REPORT

January 2014

Structure	Chemical (for TSCA inventory name and relevant trade names see the individual profiles in Section 4.8)	CASRN	Human Health Effects											Aquatic Toxicity		Environmental Fate	
			Acute Toxicity	Carcinogenicity	Genotoxicity	Reproductive	Developmental	Neurological	Repeated Dose	Skin Sensitization	Respiratory Sensitization	Eye Irritation	Dermal Irritation	Acute	Chronic	Persistence	Bioaccumulation
Bisphenol A and Phenolic Alternatives																	
	Bisphenol A 2,2-bis(p-hydroxyphenyl)propane	80-05-7	L	M	L	M	H	M	M	M		M	M	H	H	VL	L
	Bisphenol F Bis(4-hydroxyphenyl)methane	620-92-8	L	M	L	M [§]	H [§]	M	H	L		VH	M [§]	M	H	L	L
	Bisphenol C 2,2'-Bis(4-hydroxy-3-methylphenyl)propane	79-97-0	L [§]	M	M	M [§]	H [§]	M	M [§]	M [§]		H [§]	M [§]	H	H	M	M
	MBHA Methyl bis(4-hydroxyphenyl)acetate	5129-00-0	L [§]	M	L [§]	M [§]	H [§]	M	M [§]	L		M [§]	M [§]	H	H	M	L
	BisOPP-A 4,4'-Isopropylidenebis(2-phenylphenol)	24038-68-4	L [§]	M	L [§]	M [§]	H [§]	M	M [§]	M [§]		M [§]	M [§]	L	H	H	M
	Bisphenol AP 4,4'-(1-Phenylethylidene)bisphenol	1571-75-1	L [§]	M	L [§]	M [§]	H [§]	M	M [§]	M [§]		M [§]	M [§]	H	H	H	M
	Substituted phenolic compound, PROPRIETARY #1		L [§]	M	L	M [§]	H [§]	M	M [§]	M [§]		M [§]	M [§]	H	M	M	L
	Substituted phenolic compound, PROPRIETARY #2		L [§]	M	L [§]	M [§]	H [§]	M	M [§]	M [§]		M [§]	M [§]	H	H	H	H
	PHBB Benzyl 4-hydroxybenzoate	94-18-8	L	M	M	L	M	M	L	M [§]		VL	VL	H	H	L [§]	L

Structure	Chemical (for TSCA inventory name and relevant trade names see the individual profiles in Section 4.8)	CASRN	Human Health Effects											Aquatic Toxicity		Environmental Fate	
			Acute Toxicity	Carcinogenicity	Genotoxicity	Reproductive	Developmental	Neurological	Repeated Dose	Skin Sensitization	Respiratory Sensitization	Eye Irritation	Dermal Irritation	Acute	Chronic	Persistence	Bioaccumulation
	Pergafast 201 N-(p-Toluenesulfonyl)-N'-(3-p-toluenesulfonyloxyphenyl)urea	232938-43-1	L	M	L	M	H	L	M	L		L	VL	H	H	VH	L



232938-43-1

N-(p-toluenesulfonyl)-N'-(3-(p-toluenesulfonyloxy)phenyl)urea

ALSO CALLED 3-(((4-Methylphenyl)sulfonyl)carbamoyl)amino)phenyl 4-methylbenzenesulfonate, 3-(3-Tosylureido)phen...

[View all synonyms \(3\)](#)

All Hazards	GS Score	Group I Human					Group II and II* Human							Ecotox			Fate		Physical		Mult	Non-GSLT					
		C	M	R	D	E	AT	ST	ST	N	N	SnS	SnR	IrS	IrE	AA	CA	ATB	P	B	Rx	F	Mult	PBT	GW	O	Other
	LT-P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	U	-	-	-	R

More Ways to Access Pharos Data

Now there are more ways to access chemical hazard data from Healthy Building Network's [Pharos](#) Database!

- Subscribe to Pharos with a Basic, Professional, or Enterprise account
- Connect your company's data system directly to live Pharos data via an Application Program Interface (API)
- Generate custom Data Downloads from our system to power your internal chemicals management programs

Next Webinar: Powering Platforms and Data Systems with Pharos

Thursday June 25th, 2020 at 1pm CST

Still manually managing lists of lists for your EHS, regulatory, or sustainability programs? Learn how our API and Data Downloads can power your internal chemicals management programs.

Hear from Charlotte Brody from Blue Green Alliance who will demonstrate how ChemHat, powered by Pharos, can keep workers and their families safe.

[Register here](#)



Thank You!

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<https://pharosproject.net/>

For more information contact:
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mdedeo@healthybuilding.net

